UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,189	10/29/2001	Damon John Ennis	10.0423 (4366)	4108

22474 7590 12/08/2006

CLEMENTS WALKER
1901 ROXBOROUGH ROAD
SUITE 300
CHARLOTTE, NC 28211

EXAMINER	
WON, MICHAEL YOUNG	
ART UNIT	**PAPER NUMBER**
2155	

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/003,189	ENNIS ET AL.	
	Examiner	Art Unit	
	Michael Y. Won	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-12,14-23 and 25-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-12,14-23 and 25-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the amendment filed October 3, 2006.

2. Claims 1, 3, 12, 14, 23, and 25 have been amended and claims 2, 13, and 24 have been cancelled.

3. Claims 1, 3-12, 14-23, and 25-33 have been examined and are pending with this action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3-12, 14-23, and 25-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Talluri et al. (US 6,615,383 B1) in view of Brasher et al. (US 6,895,586 B1).

INDEPENDENT:

As per **claim 1**, Talluri teaches a method, implemented by a communication coordinator on a module, for carrying out reliable communication in a communication system, comprising:

receiving a message from a sender intended for one or more applications, said message comprising a message identifier (see col.7, lines 10-22), and wherein said message identifier comprises a message sequence indicator (see col.7, line 23: "semi-unique sequence number" and col.9, lines 45-54: "a sequence number 288");

determining based upon said message identifier whether said message had previously been received, wherein determining whether said message had previously been received comprises: determining whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators (see col.20, lines 31-36: "If there is at least one pending message whose sequence number is not found in the received notepad copy, then remedial action is required") maintained in a table (see col.13, lines 37-39: "a sequence number "notepad" 356 for keeping track of sequence number of messages received from another node"); and in response to a determination that said message sequence indicator is not one of the sequence indicators in said set of missing sequence indicators, concluding that said message had previously been received (see col.20, lines 22-27: "If there were no pending messages... or the sequence number for all the pending messages are found in the received notepad copy, the ending and receiving systems are synchronized"); and

in response to a determination that said message had previously been received, foregoing delivery of said message to said one or more applications (see col.20, lines 27-30: "all Ack queue slots for pending messages can be cleared"); and

wherein a message exchange between a sender and a receiver is conducted ensuring that a message is delivered at most once (see col.7, lines 51-53: "ensures that each message id received and processed once and only once").

Talluri does not explicitly teach wherein a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription service request.

Brasher teaches wherein a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription service request (see col.17, lines 42-46).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Talluri in view of Brasher so that a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription service request. One would be motivated to do so because Talluri teaches of a distributed computer system (see col.7, lines 10-12) and one of ordinary skill in the art know that such implementation improves performance by drastically reducing the number of communications as compared to when subscribing to each event.

As per **claim 12**, Talluri teaches an apparatus for implementing reliable communication in a communication system, comprising:

a mechanism for receiving a message from a sender intended for one or more applications, said message comprising a message identifier (see col.7, lines 10-22), and

wherein said message identifier comprises a message sequence indicator (see col.7, line 23: "semi-unique sequence number" and col.9, lines 45-54: "a sequence number 288");

a mechanism for determining based upon said message identifier whether said message had previously been received, and wherein said mechanism for determining whether said message had previously been received comprises: a mechanism for determining whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators (see col.20, lines 31-36: "If there is at least one pending message whose sequence number is not found in the received notepad copy, then remedial action is required") maintained in a table (see col.13, lines 37-39: "a sequence number "notepad" 356 for keeping track of sequence number of messages received from another node"); and a mechanism for concluding, in response to a determination that said message sequence indicator is not one of the sequence indicators in said set of missing sequence indicators, concluding that said message had previously been received (see col.20, lines 22-27: "If there were no pending messages... or the sequence number for all the pending messages are found in the received notepad copy, the ending and receiving systems are synchronized"); and

a mechanism for foregoing, in response to a determination that said message had previously been received, foregoing delivery of said message to said one or more applications (see col.20, lines 27-30: "all Ack queue slots for pending messages can be cleared"); and

wherein a message exchange between a sender and a receiver is conducted ensuring that a message is delivered at most once (see col.7, lines 51-53: "ensures that each message id received and processed once and only once").

Talluri does not explicitly teach wherein a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription service request.

Brasher teaches wherein a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription service request (see col.17, lines 42-46).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Talluri in view of Brasher so that a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription service request. One would be motivated to do so because Talluri teaches of a distributed computer system (see col.7, lines 10-12) and one of ordinary skill in the art know that such implementation improves performance by drastically reducing the number of communications as compared to when subscribing to each event.

As per **claim 23**, Talluri teaches a computer readable medium comprising instructions which, when executed by one or more processors, cause the one or more processors to implement reliable communication in a communication system, said computer readable medium comprising:

instructions for causing one or more processors to receive a message from a sender intended for one or more applications, said message comprising a message identifier (see col.7, lines 10-22), and wherein said message identifier comprises a message sequence indicator (see col.7, line 23: "semi-unique sequence number" and col.9, lines 45-54: "a sequence number 288");

instructions for causing one or more processors to determine based upon said message identifier whether said message had previously been received, wherein the instructions for causing one or more processors to determine whether said message had previously been received comprises: instructions for causing one or more processors to determine whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators (see col.20, lines 31-36: "If there is at least one pending message whose sequence number is not found in the received notepad copy, then remedial action is required") maintained in a table (see col.13, lines 37-39: "a sequence number "notepad" 356 for keeping track of sequence number of messages received from another node"); and instructions for causing one or more processors to conclude, in response to a determination that said message sequence indicator is not one of the sequence indicators in said set of missing sequence indicators, concluding that said message had previously been received (see col.20, lines 22-27: "If there were no pending messages... or the sequence number for all the pending messages are found in the received notepad copy, the ending and receiving systems are synchronized"); and

instructions for causing one or more processors to forego, in response to a determination that said message had previously been received, foregoing delivery of said message to said one or more applications (see col.20, lines 27-30: "all Ack queue slots for pending messages can be cleared"); and

wherein a message exchange between a sender and a receiver is conducted ensuring that a message is delivered at most once (see col.7, lines 51-53: "ensures that each message id received and processed once and only once").

Talluri does not explicitly teach wherein a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription service request.

Brasher teaches wherein a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription service request (see col.17, lines 42-46).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Talluri in view of Brasher so that a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription service request. One would be motivated to do so because Talluri teaches of a distributed computer system (see col.7, lines 10-12) and one of ordinary skill in the art know that such implementation improves performance by drastically reducing the number of communications as compared to when subscribing to each event.

DEPENDENT:

As per **claims 3, 14, and 25**, which depends on claims 1, 12, and 23, respectively, Talluri further teaches wherein determining whether said message had previously been received further comprises:

in response to a determination that said message sequence indicator is one of the sequence indicators in said set of missing sequence indicators, concluding that said message had not previously been received (see claim 1, 12, and 23 rejection above); and

removing said message sequence indicator from said set of missing sequence indicators (see col.20, lines 34-36: "set to "Msg_Empty").

As per **claims 4, 15, and 26**, which depends on claims 3, 14, and 25, respectively, Talluri teaches of further comprising: in response to a determination that said message had not previously been received, delivering said message to said one or more applications (see claim 1, 12, and 23 rejection above).

As per **claims 5, 16, and 27**, which depends on claims 1, 12, and 23, respectively, Talluri further teaches wherein said message identifier comprises a message sequence indicator, and wherein determining whether said message had previously been received comprises: accessing a receiving sequence indicator associated with said sender (see claim 1, 12, and 23 rejection above); determining whether said message sequence indicator precedes said receiving sequence indicator in a predetermined sequence (see col.19, lines 38-40); in response to a determination that said message sequence indicator precedes said receiving sequence indicator in

said predetermined sequence, determining whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators (see claim 1, 12, and 23 rejection above); and in response to a determination that said message sequence indicator is not one of the sequence indicators in said set of missing sequence indicators, concluding that said message had previously been received (see claim 1, 12, and 23 rejection above).

As per **claims 6, 17, and 28**, which depends on claims 1, 12, and 23, respectively, Talluri further teaches wherein said message identifier comprises a message sequence indicator, and wherein determining whether said message had previously been received comprises: accessing a receiving sequence indicator associated with said sender (see claim 1, 12, and 23 rejection above); determining whether said message sequence indicator is equivalent to said receiving sequence indicator; and in response to a determination that said message sequence indicator is equivalent to said receiving sequence indicator, concluding that said message had previously been received (see claim 1, 12, and 23 rejection above)

As per **claims 7, 18, and 29**, which depends on claims 1, 12, and 23, respectively, Talluri teaches of further comprising: in response to a determination that said message had not previously been received, delivering said message to said one or more applications (see claim 1, 12, and 23 rejection above).

As per **claims 8, 19, and 30**, which depends on claims 7, 18, and 29, respectively, Talluri further teaches wherein said message identifier comprises a message sequence indicator, and wherein determining whether said message had

previously been received comprises: accessing a receiving sequence indicator associated with said sender; determining whether said message sequence indicator precedes said receiving sequence indicator in a predetermined sequence; in response to a determination that said message sequence indicator precedes said receiving sequence indicator in said predetermined sequence, determining whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators; in response to a determination that said message sequence indicator is one of the sequence indicators in said set of missing sequence indicators, concluding that said message had not previously been received; and removing said message sequence indicator from said set of missing sequence indicators (see claim 3, 14, and 25 rejections above).

As per **claims 9, 20, and 31**, which depends on claims 7, 18, and 29, respectively, Talluri further teaches wherein said message identifier comprises a message sequence indicator, and wherein determining whether said message had previously been received comprises: accessing a receiving sequence indicator associated with said sender; determining whether said message sequence indicator comes after said receiving sequence indicator in a predetermined sequence; and in response to a determination that said message sequence indicator comes after said receiving sequence indicator in said predetermined sequence, concluding that said message had not previously been received (see claim 1, 12, and 23 rejection above).

As per **claims 10, 21, and 32**, which depends on claims 9, 20, and 31, respectively, Talluri further teaches wherein determining whether said message had

previously been received further comprises: in response to a determination that said message sequence indicator comes after said receiving sequence indicator in said predetermined sequence, determining whether there are any intervening sequence indicators between said message sequence indicator and said receiving sequence indicator; and in response to a determination that there is one or more intervening sequence indicators between said message sequence indicator and said receiving sequence indicator, adding said one or more intervening sequence indicators to a set of missing sequence indicators (see claim 3, 14, and 25 rejections above).

As per **claims 11, 22, and 33**, which depends on claims 9, 20, and 31, respectively, Talluri further teaches wherein determining whether said message had previously been received further comprises: in response to a determination that said message sequence indicator comes after said receiving sequence indicator in said predetermined sequence, updating said receiving sequence indicator with said message sequence indicator (see col.19, lines 4-6).

Response to Arguments

5. Applicant's arguments with respect to claims 1, 12, and 23 have been considered but are moot in view of the new ground(s) of rejection. A new reference (Talluri et al. US Pat. No. 6,615,383 B1) has been discovered to explicitly teach the new amended limitations of claim 1, 12, and 23.

Talluri clearly and explicitly teaches *determining whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators* (see col.20, lines 31-36: "If there is at least one pending message whose sequence number is not found in the received notepad copy, then remedial action is required") *maintained in a table* (see col.13, lines 37-39: "a sequence number "notepad" 356 for keeping track of sequence number of messages received from another node").

Conclusion

6. For the reasons above, claims 1-33 remain rejected and pending.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Y. Won whose telephone number is 571-272-3993. The examiner can normally be reached on M-Th: 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Won

November 29, 2006

SALEH NAJJAR
SUPERVISORY PATENT EXAMINER